

III. REMARKS

Claims 1-20 are pending in this application. Claims 1, 11, and 17 have been amended. Applicants do not acquiesce in the correctness of the rejections and reserve the right to present specific arguments regarding any rejected claims not specifically addressed. Further, Applicants reserve the right to pursue the full scope of the subject matter of the original claims in a subsequent patent application that claims priority to the instant application. Reconsideration in view of the following remarks is respectfully requested.

In the Office Action, claims 1-5, 11-13, and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Su (U.S. Pub. 2006/0019482) in view of Clarke (U.S. Pub. 2005/0230836). Applicants have herein amended claim 1 to recite the deposition of a sacrificial layer that “fails to substantially fill the opening” in the dielectric layer. *See* claim 1. Applicants submit that both Su et al. and Clarke et al. fail to disclose the claimed invention including the feature as recited herein. The process recited by Su et al. teaches the deposition of a sacrificial layer “in the openings and above the plurality of dielectric stakes” (Paragraph 0025, lines 7-8; Fig. 4) with an optional hard mask layer above the sacrificial layer (Paragraph 0025, lines 21-22; Fig. 4), and “a patterned photoresist layer … formed over hard mask layer by conventional … techniques” (Paragraph 0025, lines 27-30; Fig. 4). Su et al. teach that “etching of the hard mask layer, the sacrificial layer, and the first barrier layer according to the patterned photoresist layer” achieve the end result of the “sacrificial layer envelop[ing] each of the plurality of dielectric stakes” (Paragraph 0026, lines 2-10; Fig. 5). In contrast to this process, the invention claimed herein teaches the deposition of a thin sacrificial layer over the opening that does not fill the opening, but rather coats the horizontal and vertical surfaces in the opening. Applicants further disclose the use of a directional etch to substantially remove the sacrificial layer from the

Serial No. 10/711,697

7/10

substantially horizontal surfaces of the opening, which differs from the prior art. Clarke et al. also fail to disclose this feature and every element of the claimed invention. Accordingly, Applicants submit that neither reference cited in the Office Action discloses each and every element of the claimed invention. Therefore, Applicants respectfully request withdrawal of the rejection. Applicants further submit that dependent claims 2-10 are allowable for reasons stated above relative to the independent claim, and for their own additional claimed subject matter.

Applicants have also herein amended claim 11 to recite the use of directional etching to remove "the sacrificial layer only from substantially horizontal surfaces." *See* claim 11. As discussed above relative to claim 1, Su et al. teach the use of a patterned photoresist layer (Paragraph 0026, lines 2-5; Fig. 4) in connection with a dry etch procedure (Paragraph 0026, lines 5-6), in contrast with the use of directional etching taught in the present invention. Clarke et al. also fail to disclose such use of a directional etch as a step in the claimed method (see claim 11). Therefore, Applicants respectfully request withdrawal of the rejection, as neither reference cited in the Office Action discloses each and every element of the claimed invention. Applicants further submit that dependent claims 12-18 are allowable for reasons stated above relative to the independent claim, and for their own additional claimed subject matter.

Applicants have also herein amended claim 17 to recite the deposition of a sacrificial layer that "fails to substantially fill the opening" in the dielectric layer, as well as the use of directional etching to remove "the sacrificial layer only from substantially horizontal surfaces." (*See* claim 17, as similarly recited in claims 1 and 11, respectively.) Applicants submit that both Su et al. and Clarke et al. fail to disclose the claimed invention including the features as recited herein.

Serial No. 10/711,697

8/10

As discussed above relative to claim 1, the process recited by Su et al. teaches the deposition of a sacrificial layer "in the openings and above the plurality of dielectric stakes" (Paragraph 0025, lines 7-8; Fig. 4) with an optional hard mask layer above the sacrificial layer (Paragraph 0025, lines 21-22; Fig. 4), and "a patterned photoresist layer" (Paragraph 0025, line 27-28; Fig. 4). Su et al. teach that "etching of the hard mask layer, the sacrificial layer, and the first barrier layer according to the patterned photoresist layer" achieve the end result of the "sacrificial layer envelop[ing] each of the plurality of dielectric stakes" (Paragraph 0026, lines 2-10; Fig. 5). In contrast to this process, the invention claimed herein teaches the deposition of a thin sacrificial layer over the opening that does not fill the opening, but rather coats the horizontal and vertical surfaces of the opening. The claimed invention further teaches the use of a directional etch to substantially remove the sacrificial layer from the substantially horizontal surfaces of the opening, which differs from the prior art. Clarke et al. also fail to disclose this feature and every element of the claimed invention.

As discussed above relative to claims 1 and 11, Su et al. teach the use of a patterned photoresist layer (Paragraph 0026, lines 2-5; Fig. 4) in connection with a dry etch procedure (Paragraph 0026, lines 5-6), in contrast with the use of directional etching taught in the present invention. Clarke et al. also fail to disclose such use of a directional etch as a step in the claimed method (see claim 17, as similarly recited in claim 11). Accordingly, Applicants submit that neither reference cited in the Office Action discloses each and every element of the claimed invention. Therefore, Applicants respectfully request withdrawal of the rejection. Applicants further submit that dependent claims 18-20 are allowable for reasons stated above relative to the independent claim, and for their own additional claimed subject matter.

Serial No. 10/711,697

9/10

IV. CONCLUSION

Applicants respectfully submit that the Application as presented is in condition for allowance. Should the Examiner believe that anything further is necessary in order to place the application in better condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



Spencer K. Warnick
Reg. No. 40,398

Date: April 14, 2006

(JLM)

Hoffman, Warnick and D'Alessandro, LLC
75 State Street, 14th Floor
Albany, New York 12207
Phone: (518) 449-0044
Fax: (518) 449-0047

Serial No. 10/711,697

10/10